

## REMARKS

Claims 1-19 are pending in the application. In the Final Office Action of January 16, 2003, the Examiner made the following disposition:

- A.) Rejected claims 1-3, 9-13, and 19 under 35 U.S.C. §103(a) as being unpatentable over *Jackson et al.* in view of *Twynam et al.*
- B.) Rejected claims 4-8 and 14-18 under 35 U.S.C. §103(a) as being unpatentable over *Jackson et al.* in view of *Twynam et al.*, and further in view of *Nirschl et al.*

Applicants respectfully traverse the rejections and address the Examiner's disposition as follows:

- A.) Rejection of claims 1-3, 9-13, and 19 under 35 U.S.C. §103(a) as being unpatentable over *Jackson et al.* in view of *Twynam et al.*:

Applicants respectfully disagree with the rejection.

Applicants' claims 1, 9, 10, and 19 have each been amended to cancel --a TiN film,-- from the claimed Markush groups. Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE**".

Independent claims 1, 9, 10, and 19, each as amended, each claim a metal nitride film that is selected from the group consisting of a WSiN film, a TaN film, a TaSiN film, a TiSiN film, and a TiON film.

This is clearly unlike *Jackson et al.* in view of *Twynam et al.* As stated by the Examiner, *Jackson et al.* fails to teach Applicants' claimed metal nitride film selected from the group of claimed materials. The Examiner combines *Jackson et al.* with *Twynam et al.* in an attempt to disclose or suggest Applicants' claimed metal nitride film, however, Applicants respectfully submits that *Jackson et al.* in view of *Twynam et al.* still fails to disclose or suggest Applicants' claims 1, 9, 10, and 19.

*Twynam et al.* discloses that "it is preferred to use a heat resisting metal including a refractory alloy such as WSi and WN for the emitter electrode, more preferably, WN is used". (Col. 5, lines 13-16). Thus, *Twynam et al.* merely discloses WSi and Wn. Unlike Applicants' claims 1, 9, 10, and 19, nowhere does *Twynam et al.* disclose or suggest using a WSiN film, a TaN film, a TaSiN film, a TiSiN film, or a TiON film. Therefore, *Jackson et al.* in view of *Twynam et al.* still fails to disclose or suggest Applicants' claims 1, 9, 10, and 19.

Claims 2-3 and 11-13 depend directly or indirectly from claims 1, 9, 10, or 19 and are therefore allowable for at least the same reasons that claims 1, 9, 10, and 19 are allowable.

Applicants respectfully submit the rejection has been overcome and request it be withdrawn.

B.) Rejection of claims 4-8 and 14-18 under 35 U.S.C. §103(a) as being unpatentable over Jackson et al. in view of Twynam et al., and further in view of Nirschl et al.:

Applicants respectfully disagree with the rejection.

Applicants' independent claims 1 and 10 are allowable over *Jackson et al.* in view of *Twynam et al.* as discussed above. *Nirschl et al.* still fails to disclose or suggest a metal nitride film that is selected from the group consisting of a WSiN film, a TaN film, a TaSiN film, a TiSiN film, and a TiON film. Accordingly, *Jackson et al.* in view of *Twynam et al.* and further in view of *Nirschl et al.* still fails to disclose or suggest Applicants' claims 1 and 10.


Claims 4-8 and 14-18 depend directly or indirectly from claims 1 and 10 and are therefore allowable for at least the same reasons that claims 1 and 10 are allowable.

Applicants respectfully submit the rejection has been overcome and request it be withdrawn.

#### CONCLUSION

In view of the foregoing, it is submitted that claims 1-19 are patentable. It is therefore submitted that the application is in condition for allowance. Notice to that effect is respectfully requested.

Respectfully submitted,

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## **VERSION WITH MARKINGS TO SHOW CHANGES MADE**

### **In the Claims:**

Please amend claims 1, 9, 10, and 19 as follows:

1. (Three Times Amended) A multi-layered structure for fabricating an ohmic electrode, comprising a non-single crystal semiconductor layer comprising In and a film including at least a metal nitride film which are sequentially stacked on a III-V compound semiconductor body, wherein said metal nitride film is selected from the group consisting of a WSiN film, a TaN film, a TaSiN film, [a TiN film,] a TiSiN film, and a TiON film.

9. (Three Times Amended) A multi-layered structure for fabricating an ohmic electrode, comprising a non-single crystal semiconductor layer comprising In and a film including at least a metal nitride film which are sequentially stacked on a III-V compound semiconductor body, the energy barrier between said non-single crystal semiconductor layer and said film being lower than the energy barrier between said III-V compound semiconductor body and said film, wherein said metal nitride film is selected from the group consisting of a WSiN film, a TaN film, a TaSiN film, [a TiN film,] a TiSiN film, and a TiON film.

10. (Three Times Amended) An ohmic electrode obtained by annealing a multi-layered structure for fabricating an ohmic electrode, comprising a non-single crystal semiconductor layer comprising In and a film including at least a metal nitride film which are sequentially stacked on a III-V compound semiconductor body, wherein said metal nitride film is selected from the group consisting of a WSiN film, a TaN film, a TaSiN film, [a TiN film,] a TiSiN film, and a TiON film.

19. (Three Times Amended) An ohmic electrode provided on a III-V compound semiconductor body obtained by annealing a multi-layered structure for fabricating an ohmic electrode, comprising a non-single crystal semiconductor layer comprised of In and a film including at least a metal nitride film,

the energy barrier between said non-single crystal semiconductor layer and said film being lower than the energy barrier between said III-V compound semiconductor body and said film, wherein said metal nitride film is selected from the group consisting of a WSiN film, a TaN film, a TaSiN film, [a TiN film,] a TiSiN film, and a TiON film.

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited as First Class Mail in an envelope addressed to Asst. Commissioner for Patents, Washington, D.C. 20231 on April 15, 2003.

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